

DECLARATION OF CONFORMITY

The manufacturer: **FARO S.p.A.**
Via Faro, 15
20060 Ornago (Milano) ITALY

declares under its own responsibility that following product:

Product name: **Dental Office Turbine**

Model: **S405**

It is factory new in accordance with the provisions of art. 6 para 2 of D.L. 626/94.

It fully conforms to the following European directives and national acceptances:

93/42/CEE (medical devices directive)
Class which the equipment belongs to: **IIa**

It conforms to the following standards:

CEI EN 60601-1
CEI EN 50081-1
CEI EN 50082-1
CEI EN 55022
IEC 801-2
IEC 801-3
IEC 801-4

Dott. Angelo Favonio
Managing Director

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SYMBOLS USED IN THIS MANUAL



Danger

The paragraphs marked with this symbol contain instructions to be followed carefully to avoid damage to the device, the operator and the patient.



Prohibition

This icon identifies what to prevent doing to avoid damage to the device.



Warning

These instructions warn to be very careful to avoid situations which could damage the device.



Suggestions

With this icon information is supplied permitting more effective use of the device.

SAFETY RULES

Follow all instructions set forth in this manual.





- Device is designed for use only in a dental office by medical personnel to perform specific dental operations.


- Device must be sterilized before use each time.
- Device is not delivered sterilized, therefore it must be sterilized before use.



- Sterilization parameters must be in conformity with Official Pharmacopoeia (for example 121°C [249,8°F] to 135°C [275°F]).
- Do not immerse turbine in any disinfecting liquid.
- Device must always be washed before sterilization (see page 38).

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- Device must be installed by user in a specific power supply system (dental unit) and be connected to a cable.
 -  **Never press button when turbine is still rotating.**
 - **Systems of fastening to cables meet EN standards 29168.**
 - **Fit in the turbine only burrs with stems meeting ISO standards 1797 in turbine.**
 - Make sure burr is perfectly seated.
 - **Avoid extended positioning of light in patient's eyes** (turbine with light).
 - **S405 version with light is not protected against penetration of liquids.**
 -  Do not attempt to repair turbine yourself. Only perform operations set forth in this manual. For any work not described in this manual apply to our Service Department.
 - Turbines of series "S405" must be used only for purpose described.
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-  When the equipment is packed for shipment or stock, it can lie for maximum 15 weeks to environment conditions that do not exceed the following ranges:
 - ⇒ **Surrounding temperature of -20°C (-4°F) or +70°C (158°F)**
 - ⇒ **Relative humidity from 10% to 90%**
 - ⇒ **Atmospheric pressure from 500 to 1060 mBar.**
 - **This turbine in version with light must be powered in conformity with CEI EN standard 60601-1.**
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FEATURES

Purpose of device is to provide movement to a rotating body (i.e. a burr) for performance of specific operations in dentistry.

The "S405" turbine is produced in following models:

***SP405** with push-button - Borden - 4-way - Quick Connection*

***SLP405** with push-button and light electrified Quick Connection*



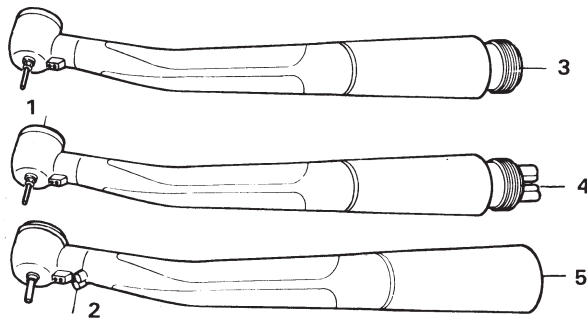
ALL S405 TURBINES HAVE A CONTAMINATED-LIQUID HOLDING SYSTEM.

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- Turbines with burr replacement system by pressing push-button provided on turbine head.
 - Direct turbine versions with Borden and 4-way systems for connection to cable.
 - Turbine version with Quick cable connection system using a Quick connector (Borden / 4-way / electrified).
 - Optical fiber version providing illumination of operating area.
 - All "S405" models can be sterilized in an autoclave in conformity with Official Pharmacopoeia (for example 121°C [249,8°F] to 135°C [275°F]).
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DESCRIPTION OF PARTS



- 1 Push-button
- 2 Optical fiber
- 3 Borden Connection
- 4 4-way Connection
- 5 Quick Connection

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INSTALLATION

Check to make sure following items are received:

- Dental turbine - Universal wrench - Pins - Operating manual

• DEVICE CAN BE INSTALLED BY USER.

- Make sure that compressed air used is dry and oilfree filtered.
- Screw S405 turbine to cable or to Quick connector. Insert Quick Connector in turbine lengthwise by pressing the two push-buttons.

IMPORTANT

- The instrument must not be started without a tool inserted into the chuck.

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OPERATING INSTRUCTIONS

Try turbine to make sure it rotates and that air and water come out of holes (spray).



To prevent exhausted air from striking hand, **S405 turbines with Borden coupling**, are made to exhaust into cable (FARO prepared cables). If cable doesn't have this exhaust "A", **remove O-ring "B"**, using small tool (fig. 1).

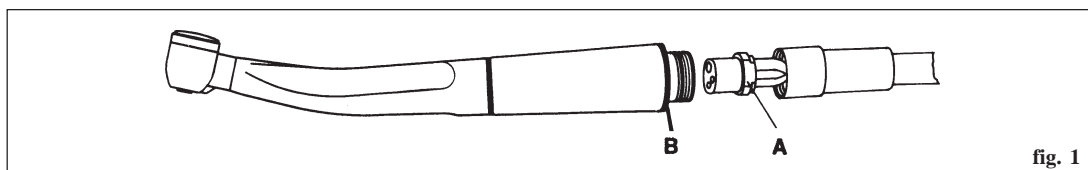


fig. 1

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Replacing burr SP405 turbine (push-button version)

To replace burr just press push-button on turbine head (fig. 2), pull out old burr and fit new one.



The push-button burr-locking system is designed to be fully effective when rotating. To avoid damaging locking system do not attempt to remove burr with turbine stopped without pressing push-button.

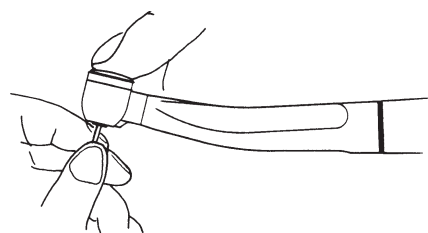


fig. 2

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MAINTENANCE

Cleaning



- This device can be sterilized in conformity with the parameters of the Official Pharmacopoeia (for example 121°C [249,8°F] to 135°C [275°F]).



- Office turbine must be sterilized after each patient.
- Before sterilization device must always be cleaned externally with a brush under running water or with an alcohol-based solution.



- S405 turbines can be disinfected externally with a chemical disinfectant (disinfection with spray or with damp cloth).
- Do not leave S405 turbines immersed in a disinfection liquid.
- This device cannot be cleaned in thermidisinfector.

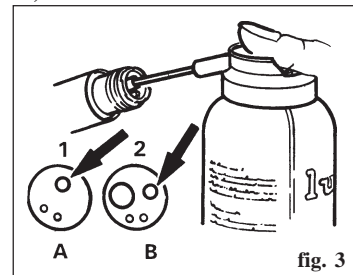
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Lubrication

S405 turbines must be lubricated either daily and before and after each sterilization by spraying special FARO lubricant into rear (other lubricants should not be used).

To lubricate turbines with Borden "A" or 4-way "B" connection, proceed as follows (fig. 3):

- Unscrew the ringnut connecting the cable to the turbine.
- Insert aerosol lubricant injector in hole "1" or "2" and spray in lubricant.
- Reconnect cable to handpiece and run device without load for a few seconds.



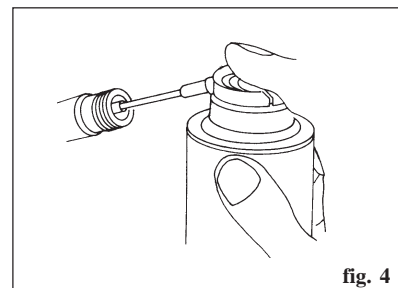
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To lubricate handpieces designed for a "QUICK CONNECTION" proceed as follows (fig. 4):

- Disconnect turbine by pressing two push-buttons on the connection.
- Fit lubricant aerosol bottle injector in rear of turbine and spray in lubricant.
- Remove aerosol injector from turbine and reconnect handpiece to quick connector. Run turbine without load for a few seconds.



ALWAYS LUBRICATE TURBINE AFTER STERILIZATION.



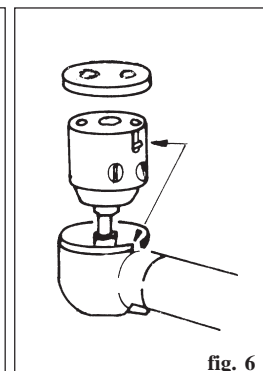
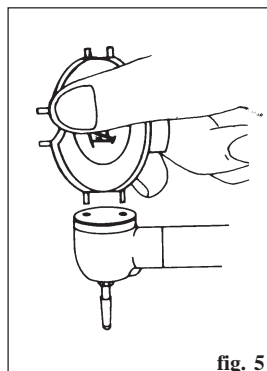
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Cartridge replacement

For easy cartridge replacement it is recommended to leave burr in place and recover it later.

Proceed as follows:

- Using universal wrench "A" supplied, unscrew cover (fig. 5), then draw out cartridge by pressing from burr side.
- Insert new cartridge being careful to position reference pin in its seat (fig. 6).
- Screw down cover using the same universal wrench.



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Changing light bulb

To change light bulb "L" proceed as follows (fig. 7):

- Disconnect turbine from cable by pressing two small push-buttons on quick connector.
- Unscrew sleeve "M" of turbine body counter-clockwise and withdraw it up to stop.
- Use tool as a lever under lamp, disconnect lead and withdraw lamp.
- Fit new bulb being careful to snap it correctly into position in its seat.
- Screw down sleeve and connect cable.

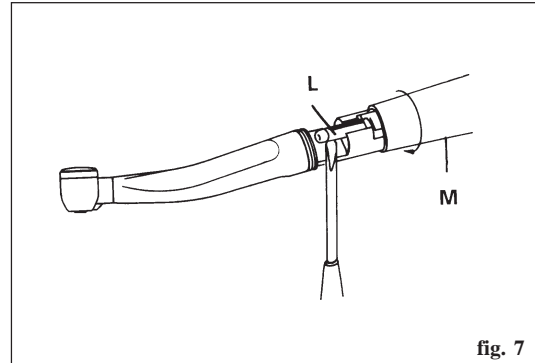


fig. 7

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Cleaning nozzles

If small holes from which emerge water and air are clogged, free passage **using pin "S" provided** (fig. 8). It is recommended to carry out this operation regularly once a week.

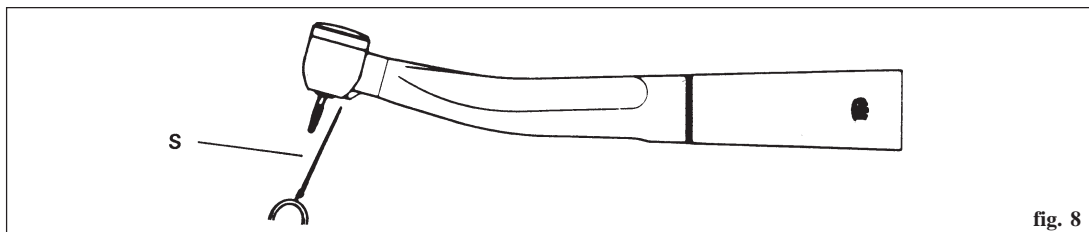


fig. 8

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TROUBLESHOOTING

Turbine sounds different, it vibrates too much and cutting power is reduced.

- Check cartridge condition and change it if necessary (see page 41).
- In case of difficulty see our Service Department.

Optical fiber turbine does not light.

- Check condition of light bulb and change it if necessary (see page 42). In case of difficulty see our Service Department.

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No water or spray comes out of turbine.

- Disconnect turbine from cable and check if water come out. If not, see our Service Department.
- Check to see if hole in Turbine is clogged and if necessary clean it (see page 43). In case of difficulty see our Service Department.

Burr locking system or rotor are damaged.

- See our Service Department.

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DATA SHEETS

Direct coupling SP405 turbine

	<i>Borden 3 way</i>	<i>4 way</i>
Rotation Speed [rpm]	: 395.000	390.000
Max power output [W]	: 12,5	12
Operating pressure [bar]	: 2,2 ± 0,2	2,2 ± 0,2
Max air consumption [l/min]	: 45	35
Max water consumption [ml/min]	: 80	80
Noise level [dB (A)]	: < 60	< 60
Vibrations [m/s ²]	: < 2,5	< 2,5
Head dimensions [mm]	: Ø 12,4 / H 15	Ø 12,4 / H 15
Weight [g]	: 73	74

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Quick connection SP405 turbine / SLP405 light turbine

	<i>Borden 3 way</i>	<i>4 way / lux</i>
Rotation Speed [rpm]	: 395.000	380.000
Max power output [W]	: 10,3	10,8
Operating pressure [bar]	: 2,4 ± 0,2	2,4 ± 0,2
Max air consumption [l/min]	: 42	39
Max water consumption [ml/min]	: 80	80
Noise level [dB (A)]	: < 60	< 60
Vibrations [m/s ²]	: < 2,5	< 2,5
Head dimensions [mm]	: Ø 12,4 / H 15	Ø 12,4 / H 15
Weight [g]	: 68	68/78

Light bulb SLP405 turbine data sheets

Power supply [V]	: 3,5
Current input [mA]	: 740
Power input [W]	: 2,7

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CLASSIFICATION OF "SL405 turbine with light" DEVICE

- Device of Class II.
- Device of Type B.
- Device not protected against liquid penetration.
- Device not suited for use in the presence of anesthetic mixtures inflammable with air, oxygen or nitrous oxide.



To obtain a safe system the use of a FARO electronic circuit is recommended.

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GUARANTEE CERTIFICATE

FARO offers the final customer a **12-months** guarantee for the turbine and **6-months** guarantee for the rotor starting from the date of purchase.

Repairs under guarantee must be performed at FARO; expenses and transport risks are at the risk of the purchaser.

Repair under guarantee is considered valid only when:

- all sections of the certificate have been filled in and sent in advance to FARO by Fax (039.6010540).

The guarantee covers faults due to the bad quality of the material or manufacturing defects; in the case of valid claims, the guarantee covers free repair or replacement. **Claims for damages and/or interest are excluded.** The guarantee is not considered valid, at the sole discretion of FARO, if the fault is due to tampering, damage, incorrect use, improper maintenance and normal wear and tear.

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